
ABSTRACT

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Apparatus and method for cutting a workpiece by the use of a laser beam and an assist gas, in which at least one optical element is used to focus the laser beam at several focal points separate from one another, and in which, as assist gas for the laser beam, a gas mixture containing hydrogen and at least one inert gas is used. The optical element is transparent or reflecting and is chosen from lenses, mirrors and combinations thereof, preferably a bifocal lens. The workpiece to be cut is made of stainless steel, coated steel, aluminum or an aluminum alloy, non-alloy steel or alloy steel. The inert gas is chosen from nitrogen, argon, helium and mixtures thereof.

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